

XXV

Extensions of Traditional Library Services

THE additions of MEDLARS, the Lister Hill Center, the grants program, the National Medical Audiovisual Center, and the Specialized Information Services to the basic library structure were the major events within the National Library of Medicine during the 1960's and 1970's, but other important activities occurred during this period.

The Library strengthened its resources in subjects allied to medicine in order to improve its ability to render services to all health practitioners. An increased emphasis on dental literature was catalyzed by two regents: George W. Teuscher, dean of the School of Dentistry at Northwestern, and Russell A. Dixon, head of the School of Dentistry at Howard. Teuscher and Dixon heightened Cummings' awareness of the needs of the dental profession, and in July 1965 he recruited Kenneth C. Lynn, a PHS dental officer, as NLM's coordinator for dental affairs. Lynn helped define the scope and coverage of the dentistry collection, made arrangements for the American Dental Association to cooperate in refining the MESH terminology, assisted in organizing conferences on continuing education in dentistry, represented the Library at dental meetings, reviewed NLM publications relating to dentistry, and furthered the interests of the dental profession in other ways. The new emphasis on the subject also benefitted from the advice of Dixon, whom NLM retained as consultant-in-residence on dental affairs. Through its agreement with the American Dental Association, NLM was provided with the services of two dentists, Faith Stephan and Raquel Halegua, who indexed for *Index Medicus* and *Index to Dental Literature* and developed the dental vocabulary for MESH. Within a relatively short time the Library was providing greater support than ever before for the dental profession.¹

Improvements in the collection of veterinary literature were stimulated by James Steele, the chief veterinary officer of the Public Health Service. Steele, talking to Cummings, emphasized the importance of NLM to his profession, and pointed out that neither NLM nor the National Agricultural Library completely satisfied its needs. Cummings conferred with Foster Mohrhardt of the Agricultural Library, and the two agreed that their institutions would cooperate in developing the scope and coverage of their veterinary health sciences collections, so that between them they would cover the subject completely, with

minimum duplication. Cummings recruited Fritz P. Gluckstein as coordinator of veterinary affairs. Gluckstein, a veterinarian, who had been chief of the Microbiology Branch, Science Information Exchange, Smithsonian Institution, came to NLM in January 1966. He brought to the Library a philosophical point of view that permitted the institution to serve veterinary medicine without becoming involved in subjects properly belonging to Agriculture, and he made a careful study of the scope and coverage policy, differentiating the literature that the Library of Medicine and the Agricultural Library should each acquire. The Library set up a panel on veterinary medicine composed of representatives of NLM, the National Agricultural Library, and the American Veterinary Medical Association to develop an authoritative, precise vocabulary of veterinary terms for use by both libraries and for MESH. As the Library's support of the veterinary profession improved, more and more veterinarians came to rely on NLM for information.²

To accommodate writers, historians, literature researchers, and others who needed library facilities for long periods of time, Cummings in 1964 expanded the offices set aside for them in the stacks. This had been desirable earlier but not possible because of lack of space in the old building. Among the first to use the facilities were Stanhope Bayne-Jones, writing about the history of preventive medicine in the Army during World War II; James P. Leake, revising manuals on smallpox and vaccination; Bess Furman Armstrong, compiling a popular history of the Public Health Service; and Robert Pollitzer, the WHO expert on plague. A few years later the Library established a formal Scholars-in-Residence Program. Appointments were made by the Board of Regents. Researchers were provided with offices and reference assistance. The first scholars were Fred L. Soper, epidemiologist, former director of Pan American Sanitary Bureau and WHO Regional Office for the Americas, studying the evolution of international health, and Harry F. Dowling, former professor at George Washington University and University of Illinois medical schools, author of works on drugs, researching the history of drug regulations.³

The continued expansion of the mission, personnel, and facilities of the Library made necessary major and minor changes in its organizational structure. Molded by Rogers in 1960 into five operating divisions and an Office of the Director, the structure was revised again in 1962 following recommendations of the Study Group on Mission and Reorganization of the Public Health Service. In 1964 as a result of a decision of the Comptroller General and the opening of MEDLARS, the staff rewrote NLM's functional statement and divided the operations among seven divisions. The following year a management analysis, requested by Cummings, led to a major reorganization; the five service divisions were grouped into an Intramural Program (later Library Operations) and three new grants divisions in an Extramural Program, each program under an associate director. In 1967 the two programs were joined by the Toxicology Information Program (later Specialized Information Services), the Research and Development Program (later the Lister Hill Center), and the National Medical

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

Audiovisual Center, all under associate directors. On April 1, 1968, the Library, which had been under the Office of the Surgeon General of the Public Health Service since 1956, was made a component of the National Institutes of Health. The five programs, along with the Office of the Director and Office of Computer and Communications Services, remained the basic units of the organization, alterations thereafter consisting of shifts and regroupings, additions and deletions of groups, and changes in name.⁴

CONTINUING EDUCATION

Before midcentury county medical societies and hospital staffs played the major role in stimulating the continuing education of physicians although large medical societies such as the American Medical Association, American College of Surgeons, and American College of Physicians held annual meetings for the purpose. In the 1950's and 1960's medical school facilities increasingly cooperated in the process of continuing education by presenting courses for practitioners. In 1955 the Council on Medical Education established an advisory committee on continuing medical education, which later reviewed programs on continuing education and accredited organizations that presented them.

Like every other medical library, NLM played a passive role in continuing education by providing literature to health workers keeping up with advances in their professions. Cummings took steps to change the role to an active one. He sought advice from those who had given thought to the subject, including Bernard V. Dryer, who had recently written *Lifetime Learning for the Physician*. In August 1965 he appointed a committee, headed by Carl Douglass, to consider the ways in which NLM could assist physicians, dentists, nurses, dietitians, medical librarians, and other health professionals desiring to further their education. A short time later he created a new position, continuing education officer, and brought Burnet Davis from the Public Health Service to fill the post. In November the interest of William Hubbard, Jr., and other Regents was reflected in a recommendation that NLM should develop and support, directly and through regional and local medical libraries, research, experiments, and demonstrations to improve techniques for the continuing education of health workers.

To obtain suggestions for a program, Douglass and Davis organized a meeting of leaders in medical education in January 1966. Following this meeting NLM moved ahead internally and externally. Within, it began to arrange conferences with professional societies, and it installed facilities for self-instruction in the main reading room. The first of these was an audiovisual carrel equipped with rear-screen motion picture projectors and earphones. The collection of audiovisuals was broadened and placed in the carrel. A year later a television set with earphones was installed, and videotapes, including those from the Network for Continuing Medical Education, were made available. The area was finally enlarged to contain three soundproofed carrels where patrons could study using the latest audiovisual equipment and a wide variety of instructional



One of the Library's learning resource carrels, in which patrons could view and listen to a wide variety of medical and audiovisual materials, including 35 mm slide/audiotapes, video cassettes and 16 mm films.

materials. These carrels not only served local users, they provided NLM with experience and served as demonstration models for other libraries.

While facilities in the Library motivated health workers in the Washington area to continue their education, encouragement to persons elsewhere was rendered through the grants program. Grants for resources stimulated libraries of community hospitals, professional societies, and medical schools to acquire audiovisual programs, microfiche readers, slide projectors, microfilm readers, tape recorders, and other equipment and materials for regular and continuing education. Grants for research enabled medical institutions to develop techniques for reaching the practitioner through visual materials, programmed instruction, and other means.⁵ Grants for training permitted staff members of libraries to seek instruction in the use of new learning materials and equipment, to serve practitioners better. Each regional library that was assisted under the grants program was expected to support continuing education within its region.⁶

In addition to awarding grants to encourage medical libraries to assist in continuing education, NLM also provided materials for, and it demonstrated the usefulness of modern communications systems in, continuing education. Through the National Medical Audiovisual Center it cooperated with professional societies, medical schools, and the Association of Professors of Gynecology and Obstetrics in developing audiovisual courses. It provided instruction in the production of high quality courses. It produced audiovisuals for distri-

bution at reasonable prices, and it compiled catalogs to assist users in locating appropriate instructional materials. The Lister Hill Center cooperated with schools and organizations, among them the Universities Associated for Research and Education in Pathology, in creating materials and models for regular and continuing education.⁷ It demonstrated the use of a computerized instructional network linking schools, hospitals, and organizations. It applied satellites and broadband television in regular and continuing education. It developed the Knowledge Base Research Program, an interdisciplinary research program involving the design, demonstration, testing, and evaluation of computerized knowledge bases in specialized areas to achieve a more rapid transfer of new medical information to health professionals, particularly physicians.

Continuing education cut across most of the divisional lines in NLM's organizational structure. Therefore to oversee the program Cummings enlisted Ralph P. Christenson as successor to Burnet Davis, and in 1970 he appointed Harold M. Schoolman, former director of the Veterans Administration Education Service, as a special assistant and later as deputy director for research and education. Schoolman provided liaison between NLM and outside organizations and between NLM divisions in matters of continuing education.

Continuing education was in its infancy when the Library began its efforts to assist health professionals who desired to learn in their homes, offices, hospital libraries, or local medical libraries at their own pace, at times convenient to them. The Library attempted to respond to and to stimulate the recognition of the importance of the information component of all continuing medical education activities. It was the unresolved problems of continuing medical education that made the results of NLM's efforts less than was hoped for.⁸

INTERNATIONAL COOPERATION

From the 1950's onward the institution was to render much more technical assistance to medical libraries in other countries than ever before. This was owing to several circumstances, among them the policy of the United States in assisting other nations, the development of rapid communication that brought countries of the world closer together, and the policy of the Library, from its infancy, to cooperate with and assist other libraries at home and abroad as far as its resources would permit. Relationships with other countries grew so numerous, diversified, and important that Cummings established the position of special assistant to the director (later assistant director) for international programs in October 1967, and appointed Mary Corning to the post. Corning carried out subsequent negotiations for the establishment of MEDLARS and MEDLINE in other countries and assisted in planning, developing, and coordinating NLM's international activities.⁹

Members of the staff assisted institutions in many countries with technical advice. In accordance with President Johnson's commitment to the government of South Korea, Scott Adams and two members of the Board of Regents, William

N. Hubbard, Jr., and Alfred A. Gellhorn, visited medical schools in Korea in May 1966 to survey library resources for an expanded program in medical education. Adams also visited Vietnam to review with officials of the Agency for International Development the implementation of plans for an enlarged medical library at University of Saigon. At the invitation of Mexican authorities Cummings flew to Mexico City in October 1967 to make a survey of facilities in preparation for the establishment of a national medical library. NLM helped by training Mexican librarians in MEDLARS operations and the latest techniques of document handling, and it provided materials and information not available in Mexico. In 1976 Secretary of Health Gines Navarro Diaz de Leon and Cummings signed a memorandum of understanding for cooperation between NLM and the recently created Centro Nacional de Informacion y Documentacion en Salud.

With the cooperation of NLM there was developed in South America a regional library of medicine. This began in 1965 when the Pan American Health Organization Advisory Committee on Medical Research recommended the establishment of a regional medical library under sponsorship of PAHO and the Pan American Federation of Associations of Medical Schools. The Biblioteca Regional de Medicina, BIREME, was set up at the Escola Paulista de Medicina, São Paulo, Brazil, with funds from Brazil, PAHO, Commonwealth Fund, and Kellogg Fund. NLM donated literature from its own resources and through its credits with the U. S. Book Exchange, it trained BIREME's staff in modern library management and technical operations. It detailed Leonard Karel to the center in 1967 as interim director and provided Loren R. Newburn of NLM's Bibliographic Services Division as deputy director. By 1978 BIREME had a staff of 71, and it provided reference service, interlibrary loans, special bibliographies from a subset of the MEDLARS data bank, and training to Latin American medical libraries. Thus through the technical assistance of NLM groundwork was laid in South America for a major regional biomedical and health information resource.

Among other countries with which NLM cooperated were Iran, whose authorities were assisted by Corning in setting up a national library, and Australia, visited by Cummings to advise on the feasibility and design of a proposed life sciences information network.

The Library became an active participant in international organizations. Cummings served as a special consultant to the World Health Organization. Cummings and Corning represented NLM at meetings of the Pan American Health Organization Scientific Committee for BIREME. NLM Deputy Director Melvin S. Day served as the U. S. member of the UNESCO/UNISIST Advisory Committee of the UN Environmental Program International Referral Service and chairman of the Organization for Economic Cooperation and Development Environmental Information Panel. The Library became a member of the International Council of Scientific Unions' Abstracting Board, with Corn-

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

ing as its representative, and it hosted the 1976 meeting of the board in Bethesda.

From the 1880's when the Library had become prominent internationally through the distribution of *Index-Catalogue* and *Index Medicus*, it had responded to requests for services from institutions in other countries. The volume of services rendered abroad increased greatly until 1969 when, faced with severe limitations of funds and personnel, the Library was forced to restrict delivery of services to foreign countries. Two years later it resumed delivery of two services, the providing of audiovisual materials and photocopies of articles, but with charges of fees to cover costs.

The Library provided services to developing countries, where modern medical knowledge was scarce owing to the lack of facilities and resources, under an agreement with the State Department's Agency for International Development. Beginning in 1964 NLM undertook to deliver up to 30,000 services a year to AID's Washington staff, mission staff, and approximately 50 developing countries in Africa, Latin America, Asia, and the Near East. In some years NLM provided more than 20,000 services to AID nations, including photocopies of articles, reference services, MEDLARS bibliographies, and subscription to *Index Medicus*, *NLM Current Catalog*, recurring bibliographies, and other publications. The Library continued these services until 1978 when AID's funds for the purpose were exhausted.

The Library sought exchanges of medical literature with institutions in other countries much more vigorously than ever before, with the result that the number of exchange partners increased several fold. By the mid-1960's NLM was sending publications to almost 900 institutions in approximately 80 countries, including AID nations. NLM contributed *Index Medicus*, *NLM Current Catalog*, recurring bibliographies and other material, receiving in return thousands of books, periodicals, and theses, written in many languages, some of which would have been otherwise difficult to procure.

An increasing number of library administrators, physicians, study teams, and official delegations came from other countries to NLM for information, advice, and tours. In 1969, 35 countries were represented among visitors. In 1973, 225 persons from foreign nations passed through the doors. In 1975 more than 1,000 arrived, including groups from Japan, Sweden, Pakistan, Germany, Algeria, Iran, Mexico, USSR, Trinidad and Tobago, and Egypt.

THE SPECIAL FOREIGN CURRENCY PROGRAM

In the late 1950's NLM began to participate in a different kind of international cooperation brought about by the enactment of Public Law 480, the Agriculture Trade Development and Assistance Act of 1954. This law authorized the sale of surplus farm commodities to friendly nations for currencies that had to be spent within those nations. In 1958 an amendment to the act authorized U.S. government agencies to spend these currencies in having scientific and

technical information translated or abstracted in English. In 1959, through an Executive Order, the National Science Foundation was given the responsibility of developing a translation program. The Foundation negotiated contracts with scientific organizations in Poland and Israel to translate works for several government agencies. Each agency was allotted a certain number of pages: NLM's quota was approximately 3,350 pages each year.

Estelle Brodman, in charge of NLM's segment, and members of the Library staff, with advice from scientists, physicians, and librarians, chose the books and journals to be translated. Initially, the NLM program was devoted primarily to the translation of Russian literature. After the translations were completed, published (not all translations were published), and shipped to the United States, NLM distributed copies to several hundred libraries. Other copies were offered for sale through the Department of Commerce. Soon after receiving the program the Library added Yugoslavia to the countries providing translations.

Beginning with fiscal year 1962, the Library received its own Public Law 480 funds. These amounted to an equivalent of \$732,820 in FY 1962, and between \$500,000 and \$600,000 a year from FY 1963 to FY 1966. The Library continued to cooperate with the National Science Foundation, transferring funds to the Foundation for contracting overseas. In 1965 Corning renegotiated the agreement with the Foundation so that the Library could negotiate directly with contractors if it desired.

Originally the program was concerned with the translation of foreign language biomedical literature into English and the distribution of the translations to American libraries. In 1964 Mary Corning became head of the program and began to broaden its scope to include abstracting, indexing for MEDLARS, publication of conference proceedings, collaborative medical audiovisual demonstration projects, and the preparation of handbooks, dictionaries, histories of medicine, and critical reviews. Eventually the Special Foreign Currency Program came to relate to all functions and missions of the Library.

One of Corning's first acts was to arrange for European scientists to prepare digests of articles on drug research appearing in foreign language journals. The work was done by a team of scientists headed by Leo Wislicki at Hadassah Medical School, Israel, and the digests were published in a trial periodical *Drug Digests from the Foreign Language Literature* from 1965 to 1968. In cooperation with the Food and Drug Administration, NLM also contracted with Wislicki's group to abstract articles on drugs from journals not covered by the FDA's *Clinical Experience Abstracts*. The abstracts were published in the FDA journal from 1965 to 1971. In addition the Library obtained the services of Ino Sciaky and other dentists at Hadassah School of Dental Medicine to abstract articles from foreign dental journals, the abstracts being published in the American Dental Association's *Oral Research Abstracts*, from 1965 to 1971.

Corning also reached an understanding with the Polish Ministry of Health

and the Principal Medical Library, Warsaw, for the preparation of critical reviews by Polish physicians. Critical reviews, as conceived by NLM, were thorough analyses of scientific fields written by leaders in the fields describing the current state of the fields and suggesting areas of research. The first reviews, *The Application of Metabolic and Excretion Kinetics to the Problems of Industrial Toxicology* by Jerzy K. Piotrowski, and *Myoplastic Amputation and the Use of an Immediate Prosthesis* by Marian Weiss and associates, were published in 1971.

The Library had to overcome several problems in arranging programs with physicians and scientists in countries with different environments and political systems thousands of miles away. One problem was funding. In 1966 NLM began to use "bloc" financing for activities in Israel. Instead of administering and financing each project individually, Corning arranged with Moshe Pyrwes, editor of *Israel Journal of Medical Sciences*, to act as prime contractor or principal investigator and oversee all projects in his country for a certain period of years. Bloc funding possessed several advantages; it decreased administrative and paper work, relieved NLM of the problem of locating competent scientists in Israel, provided continuity in the projects, and provided stable funding over a long period of time. In 1971 after several years of negotiation, Jeanne Brand, Corning's successor, negotiated a bloc agreement in Poland, Janusz Jeljaszewicz of the Coordinating Commission for Polish-American Scientific Collaboration serving as principal investigator.

During the early years only three countries were involved in the program, Poland, Israel, and Yugoslavia. Corning, Brand, Leroy L. Langley, and G. Burroughs Mider of the Library, as well as William G. Anlyan, Robert H. Ebert, William N. Hubbard, Jr., Morris Tager, Stewart Wolfe, Alfred A. Gelhorn, and Max Michael of the Board of Regents visited health officials and scientists in these countries, seeking to improve ongoing projects and looking for opportunities for new projects. Library emissaries also visited other countries, inviting health officials to cooperate in projects of mutual benefit. In 1972 Brand negotiated research agreements in Egypt, and broadened the translation and printing activities in Tunisia, Pakistan, and India.

In some of the nations the special funds used for the programs eventually ceased to be available. When this occurred, the programs did not die but were continued under the auspices of joint cooperative agencies. In 1973 P.L. 480 funds for Israel were depleted but were replaced for 6 more years by funds from the United States-Israel Binational Science Foundation. In 1973 P.L. 480 money also became exhausted in Yugoslavia, but financial support was provided by the United States-Yugoslavia Joint Board on Scientific and Technical Cooperation. In 1974 Egyptian P.L. 480 funds ended, but the program continued first under sponsorship of the Joint Working Group on Medical Cooperation and in 1975 under an agreement on health cooperation between the governments of Egypt and the United States. In 1976 P.L. 480 funds ran out in

Poland, but the program was extended until 1985 under auspices of the Marie Sklodowska-Curie Joint Fund of the United States-Polish Joint Committee for Cooperation in the Field of Health.

Through FY 1976 the equivalent of \$8.5 million was obligated for NLM's Special Foreign Currency Program. The Library's partners produced 47 books (original writings and translations), 72 chapters and articles, thousands of abstracts, and engaged in other activities. The program was valuable in disseminating information which would not otherwise have been accessible in the United States because of language limitations and communication gaps.¹⁰

UPHOLDING THE RIGHT OF SCHOLARS TO COPY WRITINGS

The Library had started to microfilm articles for patrons in 1937, but the demand did not become large until World War II. Then, as the number of microfilmed articles climbed into the thousands, and as copies of entire journals were filmed, there arose a concern about possible violation of copyright laws, even though copying was necessary to assist research and medical care in the Armed Forces and to provide all the information the Allied Forces requested. Director Jones drew up the following rule to protect the Library:¹¹

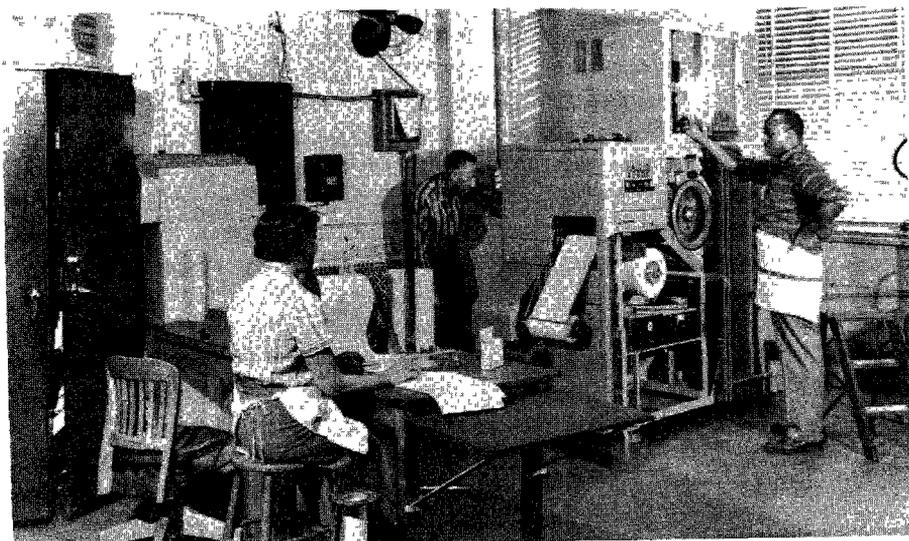
Except when the order is accompanied by the written permission of the copyright owner, the Army Medical Library will not reproduce books protected by copyright or entire periodical issues, nor will it reproduce excerpts from periodical issues within 6 months of their publication date.

After the war was over the demand for film dropped for a time, then began to rise. When Joseph McNinch became Director in 1946 he gave no thought at first to the legal questions involved in microfilming and photocopying published material. "It was not long," he recalled, "before I became aware of this most difficult problem. It was brought to a head when it was discovered that we had copied not a few pages but a complete copyrighted book."¹²

McNinch learned that the Library of Congress was thinking of approaching publishers for the purpose of arranging agreements covering photoduplication and he considered doing this with publishers of medical literature. He did not follow through for two reasons: first, the Judge Advocate's office told him that steps were being taken to permit firms to bring suit against the government in the Court of Claims for copyright infringement, but there would be little likelihood of suit because damages would be negligible; secondly, Morris Fishbein, chairman of the Honorary Consultants Committee on Copyright, pressed the viewpoint that circulation of the so-called "Gentleman's Agreement" among medical publishers would be more effective than trying to secure releases.¹³

Through McNinch's term, 1946-1949, and Rogers' term, beginning in 1949, the amount of copying increased. The old V-mail equipment, used since World War II, became obsolescent. In the meantime commercial machines capable of producing high-quality prints rapidly had been developed. After looking over models on the market, Rogers in the spring of 1957 rented a Copyflo machine that replicated 32 pages of text a minute from microfilm by a xerographic

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE



The Copyflo machine producing a long roll of photocopied articles from microfilm. Frank Shiflet, right, and Daniel Calloway operate the machine; Louise Goins cuts a roll of photocopies into pages.

process. Representatives of the Joint Congressional Committee on Printing and Binding came to the Library to see the Copyflo perform and approved the rental, later the purchase, of the machine.

After the institution was designated by Congress as a *national* library, Rogers made a thorough examination of the interlibrary loan and photoduplication services, and decided to rationalize and codify the loan policy. The Library would no longer lend publications to individuals, only to other libraries. It would not lend volumes of journals, instead it would provide photoprints of articles without charge. It would continue to lend books to other libraries, and the borrowing institution would have to pay only return postage. These new regulations would force readers in other areas to patronize their local medical libraries, leaving NLM to provide publications not obtainable locally; it would encourage the growth of local libraries; it would save wear and tear on volumes of journals; it would retain journals in the Library where they would always be available for the use of other readers and for copying purposes; the cost would be no greater than the cost of maintaining fiscal accounts on purchases of photoprints; it would reduce the expense of the borrowing library. After much discussion among the staff and Board of Regents, Rogers initiated the new policy on September 1, 1957.

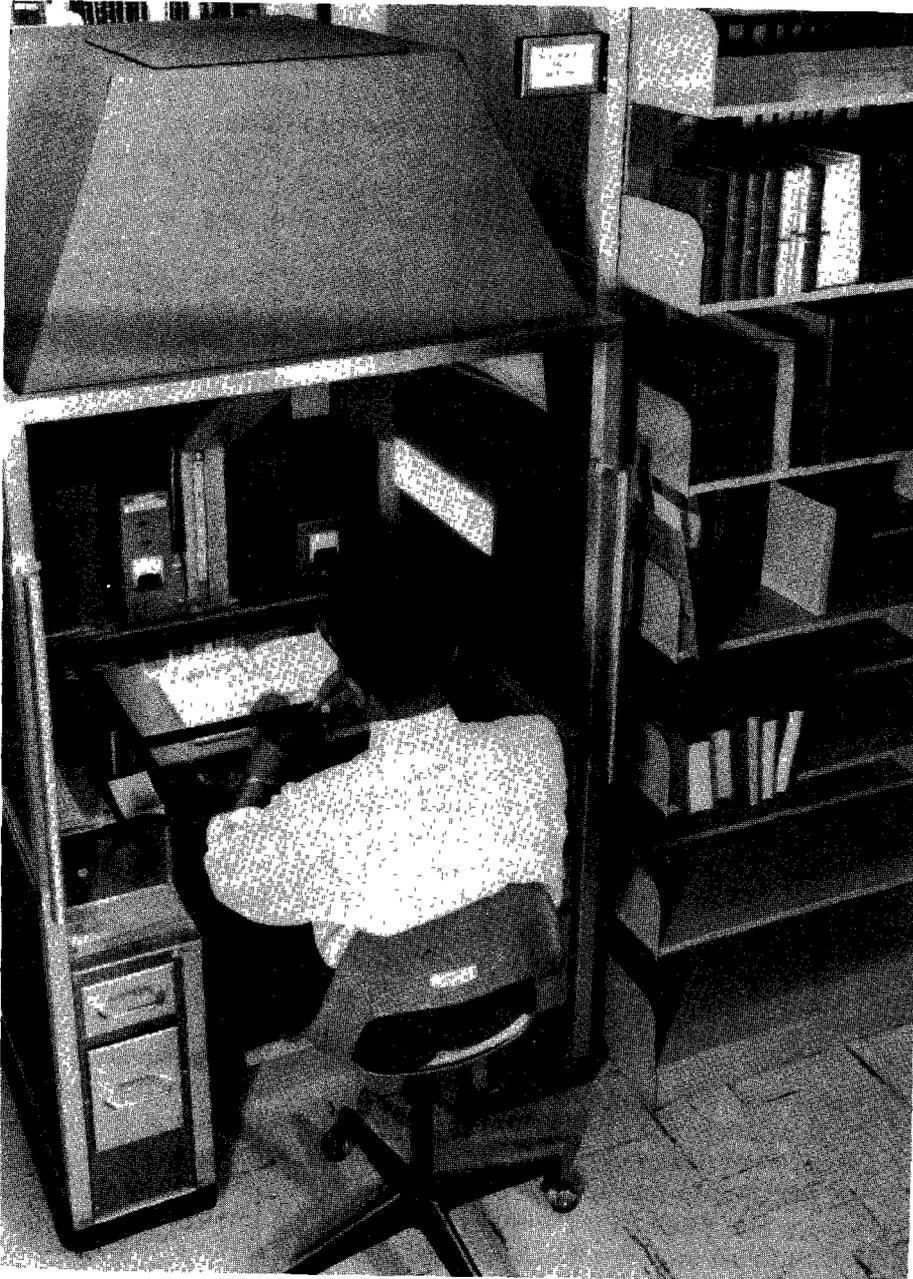
In promulgating the new policy Rogers laid down the following rules: the Library would copy no more than one article from an issue or three from a volume of a journal; it would not copy an article longer than 50 pages; it would

not make multiple copies of an article; it would copy no more than a few pages from a book. Exceptions to the regulations would be made only by approval of the Director or Librarian. Each photocopy would contain this statement in the margin: "This is a single photostatic copy made by the National Library of Medicine for purposes of study or research in lieu of lending the original." Thus the Library attempted to formulate policy with due regard to the provisions of the copyright law. Rogers hoped that the regulations would lessen risks of infringement, but he also felt that eventually there would come a test of the issues in the courts.¹⁴

After the policy had been in effect for a few years William H. Kurth made a survey of the interlibrary loan operation through June 1961, a period of almost 4 years. During this period there were 325,262 loans, 301,528 or 93 percent of which were articles satisfied by photocopies. Utilizing punched cards Kurth examined the borrowing libraries in terms of geographic location, type, and frequency of borrowing. He gathered statistics on the frequency of requests for certain periodicals, the relationship of photocopied articles to citations in *Index-Medicus*, and the age of the periodicals. His data indicated that the interlibrary loan operation was successful in meeting a large proportion of loan needs across the country. It reinforced the Library's decision to divide the serial collection in the new building by shelving older, less-used periodicals on the lowest stack level, and the recent, frequently used journals in a readily accessible area on the highest stack level. It presented data useful to the staff in other ways.¹⁵

Endeavoring to reduce the time from the arrival of a loan request to the dispatch of a photoprint or book to a minimum, the staff studied the flow of work. It sought new equipment to hasten and improve the quality of photographing, developing, and printing. A major innovation was the development of a moveable camera for use in the stack area of the new building. Originally in the copying operation, volumes containing articles to be photographed were brought from the shelves to a centralized group of microfilm cameras. These volumes were temporarily out of circulation, and furthermore there was considerable labor involved in moving, sorting, and reshelving them. Rogers and Scott Adams decided to move the camera instead of the books. With assistance of technicians from the National Bureau of Standards and other agencies, a camera, bookholder, lights, controls, and an operator's chair were installed in a little cubicle on wheels that could be pushed back and forth along an aisle. Electricity to operate the lights and controls came through an extension reaching to metal rails on the ceiling. Shortly after the Library moved into the Bethesda building five movable cameras were put into operation. Journal volumes containing articles to be copied were placed on a special shelf at the end of each range within reach of the camera operator. The operator picked the volume off the shelf, photographed the article and replaced the volume on a second shelf for reshelving. The movable cameras made photocopying cheaper, faster, and less laborious than the old procedure.

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE



The moveable camera developed to overcome the disadvantages of trucking books from the stacks. The camera housing was designed by the National Bureau of Standards. George Queen operates the filming unit, a Kodak Recordak Micro-file.

In the meantime the book industry was showing increasing concern over the amount of photocopying being done in libraries. The American Text Book Publishers Association held a meeting in New York City to which Adams was invited to present data from NLM. Using figures from Kurth's survey, Adams demonstrated that only two book publishers owned any of the 100 most heavily photocopied journals on Kurth's list. These data tended to show the divergence between commercially oriented and scientifically oriented sponsors of publishing.

Subsequently Adams invited the vice president of Williams & Wilkins, publishers of medical journals, to the Library to explore grounds of common interest and to demonstrate the degree of controls that NLM had voluntarily adopted. Soon after, William N. Passano, president of the firm, visited the Library and talked to Director Cummings about photocopying. In Passano's view the Library was infringing on his firm's copyright by photocopying articles from Williams & Wilkins journals, but he offered to permit the practice to continue if a royalty of 2 cents per page per copy were paid. Cummings pointed out that the "Gentleman's Agreement" had generally been accepted as a basis for permitting libraries to make single copies of articles for scholars and that no royalty was required by law or custom. Cummings also felt that although NLM could probably afford to pay the royalty smaller libraries could not. And finally he was concerned that the demand for royalties might escalate from 2 cents to 5 cents or 10 cents per page.

On February 27, 1968, Williams & Wilkins filed a petition in the United States Court of Claims against the government, alleging that the National Library of Medicine and the library of the National Institutes of Health had infringed on the company's copyright by photocopying articles from their journals. The case of Williams & Wilkins Company v. the United States was tried on September 9, 1970, before Commissioner James F. Davis of the Court. The firm was represented by a lawyer very knowledgeable in the subject, Alan Latman, who had prepared the report on "fair use" for the Copyright Office series of studies toward revision of the copyright law.

The suit had implications for other programs of the Library. Filming entire works for preservation could constitute infringement, and Cummings consulted with the Library of Congress and National Agricultural Library about the possibility of an amendment to the copyright bill before Congress which would permit the three national libraries to copy publications for preservation. The planned graphic image program, in which publications would be filmed, the film stored, and printed out for interlibrary loan purposes could be affected. Facsimile transmission of publications might not be permissible. Computer-based information systems and audiovisuals might run into trouble.

Cummings, Adams, Albert Berkowitz of NLM, and Seymour Taine of the NIH Library were among the witnesses for the United States. The government claimed that NLM had the right to copy any document that reported research paid for by public funds (a portion of the copied articles described research

supported by Federal grants). But the government's defense relied chiefly on the judicially-created doctrine of "fair use."

Commissioner Davis presented his report to the Court of Claims on February 16, 1972, recommending that the case be decided in favor of Williams & Wilkins. The government filed an exception to Davis' report. The publisher then approached libraries with a plan that called for an increased institutional price and with it a license to make single-copy reproductions of all articles. In addition the publisher asked for a 5 cents fee for each page copied for interlibrary loan. The Library was willing to pay the increased institutional price but without reference to license or royalty.

On November 27, 1973, the Court of Claims overturned Commissioner Davis' report by the narrow margin of four to three and ruled that the making of a single photocopy of a journal article did not violate copyright laws. The court believed that research would suffer if photocopying were banned, since "the supply of reprints and back numbers is wholly inadequate," and it was "unrealistic to expect scientific personnel to subscribe regularly to large numbers of journals which would only occasionally contain articles of interest to them." As expected Williams & Wilkins appealed the verdict to the U. S. Supreme Court. The Court listened to arguments in the case on December 17, 1974. On February 25, 1975, eight justices (one recused himself) rendered a split decision, four to four, thereby affirming the decision of the Court of Claims.

In this long legal battle NLM championed the rights of every noncommercial library in the nation. Some members of the staff worked an extraordinary number of hours compiling data to reinforce the Library's position and in acquainting lawyers with library traditions, techniques and operations. To Cummings it was the most trying event during his term as Director. For years he devoted half of his time to the case. It sapped more of his energy than all other problems combined, and he felt that it triggered the heart attack that sent him to the hospital in 1973.

The Library won this ground-breaking case by the narrowest of margins. The Court of Claims emphasized the complexity of the litigation stating, "the issues raised by this case are but part of a larger problem which continues to plague our institutions . . . how best to reconcile on the one hand the rights of authors and publishers under the copyright laws with, on the other hand, the technological improvements in copying techniques and the legitimate public need for rapid dissemination of scientific and technical literature . . . our holding is restricted to the type and context of use by NIH and NLM as shown by this record." This suit emphasized the need of revision of the copyright law. In the opinion of the Court of Claims the decision was a "holding operation" in the period before Congress passed a law covering photo and mechanical reproductions made possible by recent technology.¹⁶

The Supreme Court decision was followed approximately 2 years later by a new copyright law that revised the old law of 1909. This general revision had

begun in 1955, had been the subject of a bill introduced in the House and Senate in 1965, and had been the subject of extensive hearings before being enacted by both houses and signed by President Gerald R. Ford on October 19, 1976.¹⁷ The new law recognized the principle of "fair use" as a limitation on the exclusive rights of copyright owners and established general standards to be applied to the interpretation of "fair use." The new law confirmed the practices that NLM had been following since it began photocopying in the late 1930's.

MICROFILMING BOOKS AND JOURNALS FOR PRESERVATION

The cost of preserving perishable literary works has bothered librarians ever since libraries began. At times it has seemed as though some librarians were more concerned about preserving the books and serials entrusted to their care than in seeing them well used. Yet it is important that librarians, particularly the librarian of a national library, make certain that scarce writings, at least, be preserved for posterity.¹⁸

The National Library of Medicine possesses many works, copies of which are held by few or no other libraries in the country. Unfortunately a large proportion of these publications have been deteriorating. This was owing to repeated handling, interlibrary loan transit, and photoduplication; to the dry heat and dust in the old building; to sulfur dioxide in the atmosphere around Washington from the combustion of coal and oil; and to the nature of the paper itself. Mass produced chemically digested woodpulp paper entered commerce around 1870. Almost all of the books and journals published after that time were printed on woodpulp paper. This paper is inherently weak because of the short fibers in wood pulp and because of residual acid from the manufacturing process. Within a short period, in terms of human existence, a very large proportion of NLM's publications will disintegrate.

For years the librarians had been thinking about preserving the text of fragile publications by microfilming but had held back because of the expense. In 1954 Director Rogers asked his division chiefs to survey the collections to ascertain the books and journals most in need of preservation. The following year he instructed the photoduplication staff to begin photographing deteriorating publications when they were not making photocopies for interlibrary loan. For several years thereafter microfilming for preservation proceeded at an uneven pace, decreasing as the number of interlibrary loan requests increased and vice versa. Usually, some hundreds of thousands of pages, mostly serials, were filmed each year.

In 1964 members of the staff inspected the collections to ascertain the degree of deterioration. They estimated that the shelves held 350 million pages, 325 million of which had been printed after 1870 on woodpulp paper. Thirty-seven million pages were considered to be fully deteriorated, and this number would increase to 262 million by 1989. Deterioration was proceeding faster than microfilming.

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

Director Cummings asked the National Bureau of Standards for advice to enable NLM to improve the quality of microfilming. Edward Forbes and Thomas Bagg of the Bureau inspected the Library's equipment and procedures. They recommended improvements and drew up specifications for preservation filming.¹⁹

Cummings requested funds to enable the Library to increase the pace of preservation microfilming. The administration removed the item from his budget, but sympathetic Congressmen added money for the purpose to NLM's appropriation for fiscal year 1966.²⁰ The Library accelerated the pace of microfilming in its own building, and it contracted with commercial firms to assist, the first firms being University Microfilms and Microcard Corporation. By 1976 NLM and its contractors had microfilmed approximately 18 million pages. Since the Library at that time received approximately 18 million pages each year, the rate of filming could not catch up with the backlog of deteriorating publications.

However, the future of textual preservation may not be as gloomy as the above figures indicate. Earl Henderson and George Thoma of the Lister Hill Center saw the possibility of assisting preservation and interlibrary loans through electronic technology and began development of a system that would electronically transfer textual and graphic images onto high density optical disks, from which the images could be retrieved on a viewer or on paper. This system will provide the opportunity to investigate the extent to which optical disks may be employed to preserve the texts of NLM's perishable books and journals and to assist NLM's interlibrary loan service.

COLLECTING MODERN MANUSCRIPTS

John Shaw Billings and the Directors who succeeded him occasionally purchased or were given manuscripts of historical value. The manuscripts, shelved among the books, were listed in the *Index-Catalogue* under the names of the author or compiler and were followed by the notation MS. Billings also knew the usefulness to historians of the correspondence of noteworthy physicians—he tried unsuccessfully to purchase the letters of John Morgan, founder of the first medical school in the colonies—but he and his successors had too little money, too few assistants, too many publications to acquire, and too much service to render, to seek and collect correspondence systematically. No separate collection of manuscripts, except that of early Western and Oriental writings, existed in the Library until the 1960s.²¹

The foundation of the modern manuscripts collection was laid in 1961 when John Blake, chief of the History of Medicine Division, presented to Director Rogers a plan for obtaining the personal correspondence, diaries, laboratory notebooks, and other writings of physicians, researchers, administrators, and, in some cases, the records of medical organizations.²² Rogers agreed but could not promise funds to hire a manuscripts librarian for at least 2 years.²³ Blake, in the meantime, began to acquire papers whenever the opportunity arose, among them letters and other manuscripts of Chauncey D. Leake, Victor Ro-

binson, Esmond Long, and Henry L. Coit. These records were stored in the stacks awaiting the eventual arrival of a qualified person for the job.

In 1965 Blake received funds to engage a manuscripts librarian, Manfred Wasserman. Wasserman began to organize, and arrange the documents, removing duplicates and out-of-scope material. He compiled finding aids. He processed new collections. He cataloged hundreds of volumes of lecture notes, recipe books, diaries, journals, commonplace books, and manuscript items that had come to NLM during the past century. He processed the old Library correspondence of Billings and other former directors. One of the larger tasks undertaken was the cataloging of approximately 2,000 individual historical letters which had accumulated over the previous decades. Some of these had been given to the Library as gifts, some had been obtained for their autograph value or purchased for their medical history content, and some had been withdrawn, for one reason or another, from the Library's archival collection.

In 1966 Peter D. Olch arrived to act as deputy chief of HMD, to begin a systematic effort to acquire the papers of contemporary leaders in medicine, and to start producing and collecting oral histories. A policy was drawn up concerning in general the kinds of persons, out of the hundreds of thousands in the life sciences, whose papers would be sought and preserved for posterity. Among those who responded were William S. Middleton, Stanhope Bayne-Jones, William B. Bean, John B. Youmans, the estate of Alan Gregg, Milton Senn, Lois Murphy, Fred Soper, the Association of American Medical Colleges, Sydenham Hospital of Baltimore, American Association of Thoracic Surgery, Alpha Omega Alpha Honor Medical Society, and Interurban Clinical Club.

At first the requests brought reasonable quantities of correspondence and other records. But in 1971 one donor shipped 264 cartons containing approximately 120,000 items, many of which did not have any historical value, and which took more than a year to process. It was then decided that the Library would never again take possession of large collections sight unseen but that Olch or Wasserman would visit prospects and examine records before accepting them to make certain that the Library would receive only worthwhile material.

As medical librarians elsewhere in the country learned of the existence and scope of the manuscript collection, they called on HMD for advice. Wasserman assisted with the Lister Hill papers at University of Alabama Medical School, the Bailey K. Ashford papers at University of Puerto Rico, and the archives of the Society for Research in Child Development. Olch and Wasserman advised the Alan Mason Chesney Medical Archives of Johns Hopkins Medical Institutions.

By 1976 HMD had obtained 236 new groups of records of individuals and organizations. The acquisitions ranged in size from a few items to accumulations filling about 80 manuscript containers stretching over 35 linear feet. As the Library's holding grew historians, writers, students, and editors in increasing numbers used the material to prepare articles, obituaries, book-length biogra-

phies, and theses, and the Modern Manuscripts Collection came to be one of the attractions of the History of Medicine Division.

RECORDING AUTOBIOGRAPHIES

In 1963 Martin Cummings, at that time director of NIH's Office of International Research, was interviewed by Harlan Phillips, who was gathering information for a historical study. The questions and answers were tape-recorded and transcribed, producing an "oral history." Cummings was impressed by the potential usefulness of such interviews to historians, and 2 years later, after he had become Director of the Library, he considered the possibility of introducing oral history into the institution.²⁴

To obtain an overall picture of the utility, scope, and cost of, the facilities and personnel required for, and the technique of producing oral histories, Cummings invited five experienced practitioners of the art to NLM for a conference. Afterward he requested John Blake to add an oral history program to the History of Medicine Division.

The Library contracted with Harlan Phillips to interview notable physicians and scientists selected by Cummings and his associates. Phillips began by obtaining a lengthy autobiography of Stanhope Bayne-Jones, educator, microbiologist, and administrator, tape-recorded over a total period of 52 hours. Later Phillips conducted audiotaped interviews with Ward Darley, Lister Hill, Michael Heidelberger, and Albert Szent-György. In conjunction with interviews the staff endeavored to acquire the subjects' correspondence and other papers for the manuscript collection.

The Library contracted with historians studying modern aspects of the life sciences, in return for copies of their recordings and transcripts. In this way NLM obtained interviews bearing on the recent development of the Food and Drug Administration, on the contemporary practice of homeopathy, on the history of the child development movement, and on other subjects. The Library obtained other oral histories by gift and purchase.

In 1966 Peter Olch took charge of the oral history program. Over the succeeding years he interviewed Albert Baird Hastings, William S. Middleton, Donald D. Van Slyke, Owen Wangensteen, Shields Warren, Emile Holman, and other persons.

The steps in the production of an oral history included: preparation for the interview by studying the subjects' career in detail, an interview generally of several sessions, typing the interview from the tape recording, proofreading the typed draft, an editing of the draft by the subject, final typing, indexing, and, in some cases, binding. The entire process was slow, labor-intensive, and expensive. Finally Olch and Blake began to wonder if it would not be preferable to concentrate HMD's limited resources on the collecting and processing of the personal papers of leading physicians rather than on oral histories. In 1975 after much deliberation, an evaluation of the project by consultants, and a

review by the Board of Regents, HMD discontinued the production of oral histories, except when they would serve to supplement the papers of an individual or organization. At the time the collection comprised about 11,000 pages transcribed from approximately 520 hours of interviews with 140 persons.

COOPERATION AMONG FEDERAL LIBRARIES

The leaders of the Library of Congress, National Agricultural Library, and National Library of Medicine had consulted and exchanged information for a century, among them Billings with Ainsworth Spofford of Library of Congress, McCulloch and Jones with Herbert Putnam of LC, Jones with Ralph Shaw of National Agricultural Library, McNinch with Luther Evans of LC, and Rogers with Foster Mohrhardt of NAL and with Verner Clapp of LC. Formal relations between the three national libraries increased after midcentury and gradually encompassed other Federal libraries and information groups as cooperation offered the promise of increased efficiency in comparable operations.²⁵

In 1962 the Federal Council on Science and Technology set up an inter-agency Committee on Science Information, later renamed the Committee on Scientific and Technical Information or COSATI. COSATI concerned itself with the coordination of the various programs within Federal agencies. To do this it appointed task forces and panels to study such matters as the assessment of specialized information centers, the funding of the Science Information Exchange, promulgation of standards for descriptive cataloging of technical reports, microfiches for the storage and dissemination of reports, the creation of a clearinghouse for Federal scientific and technical information, and the establishment of a governmental depository library system.

In early 1966 the Office of Science and Technology invited Cummings to attend COSATI meetings as an observer. Later that year the Secretary of the Department of Health, Education, and Welfare appointed him as the Department's representative on the group. He soon found himself on the COSATI steering committee, the COSATI international panel, a panel concerned with establishing policies for machine-readable information distribution, and a task force on national information systems. Other members of the Library staff were asked to serve on various panels. During this period Cummings was concerned with important innovations in the Library—the starting of the research and development program that was to become the Lister Hill Center, the planning of MEDLARS II, and the development of the grants program and the Toxicology Information Program. Because of the inordinate amount of time that he, along with seven of his staff, was spending on COSATI affairs, he asked to be replaced as the DHEW representative. G. Burroughs Mider, deputy director of the Library, took his place on the committee.

COSATI provided a useful forum for the exchange of ideas and data among Federal libraries and information groups. In its conception of a national information system, it proposed that NIM be the agent for the construction of a national medical library network and be designated to coordinate and approve

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

the handling of information within the area of medicine. But COSATI's plans never progressed very far because it had no authority to redirect program emphasis or enforce common standards within agencies. It was disbanded in 1973 when the advisory functions of the Federal council were transferred to the National Science Foundation.

The most successful cooperation on a national scale was brought about by the directors of the three national libraries: Quincy Mumford of the Library of Congress, Foster Mohrhardt of the National Agricultural Library, and Cummings. They began to meet occasionally in 1964 to discuss the possibility of cooperation and of avoiding redundancy in their operations. In March 1965 they set up the Federal Library Committee, composed of directors of the three national libraries and a librarian representative of each executive department. The committee carried on its work through task forces, the most important of which was the Task Force on Automation and Other Cooperative Services. The major effort of the task forces became the development of a computer-based national serial record data bank, and machine-readable catalog formats.

In 1973 the three national librarians reorganized the committee, increased its membership to 41, and set a schedule for regular monthly meetings. The committee's deliberations touched on all areas of interest to Federal libraries, and within these areas they recommended policies and other measures for improvement. It was difficult for three national libraries, each of which had developed along its own lines, to reach unity in their operations, but through the committee they slowly approached this goal.

INTERNS AND ASSOCIATES

In the early 1950's Director Rogers became concerned over the national shortage of qualified librarians capable of moving into responsible positions in modern medical libraries. He and his staff drew up plans to offer a year of on-the-job training and intensive academic study to persons holding the master of library science degree. The educational-vocational experience would enable the interns to build careers in medical librarianship and would develop them to hold positions of responsibility in medical institutions. The maximum number of interns that the Library could train annually was three. This would provide fewer qualified medical librarians than was needed, but it was all that the Library, with its limited funds, manpower, and space could accept.²⁶

The Library announced the start of the intern program through its monthly *National Library of Medicine News* in January 1957. At that time NLM was the only medical library in the United States offering such an education, and many persons leaped at the opportunity of moving ahead in their profession. The three who were selected by a screening committee began their apprenticeship in September 1957.

The program was directed by a committee composed of divisional chiefs and the executive officer, with the Director's assistant serving as chairman. The course, designed to provide interns with a broadly based work experience,

consisted of rotating assignments in the Library's operating divisions, seminars, lectures, elective projects, attendance at local and national meetings of professional librarians, university courses, and visits to medical and research libraries and information centers.

Scores, perhaps hundreds, of medical schools, hospitals, Federal agencies, medical society libraries, and other health libraries needed specially qualified librarians, and NLM's supply of three each year was insignificant compared to the demand. Rogers and the Board of Regents desired to train a much larger group, but there was no money for the purpose. When Rogers placed estimates for funds for intern training in the budget, the items were eliminated at higher levels, and he had to use unexpended personnel funds for the purpose. The Library looked forward to the time when the grants program, then being planned, would provide for the establishment of training programs elsewhere.

In addition to the Intern Program the Library offered advanced training for its own employees. They were invited to attend intern lectures in the building. Employees who wished to attend courses in languages, library science, or other pertinent subjects were sent to the Department of Agriculture Graduate School, The Catholic University, and other universities in the Washington area.

The development of MEDLARS in the early 1960's brought the first phase of the intern program to an end. At the conclusion of the September 1963–August 1964 session the Intern Program was suspended. Because of need in other libraries for persons capable of working with automated systems, particularly MEDLARS, NLM began to offer training in indexing, searching, MESH, and concepts of information storage and retrieval. Librarians came from other areas of the country and from foreign nations to attend these classes. When AIM-TWX, MEDLINE, and other on-line systems were developed, instruction was expanded to include these.

In 1966 NLM resumed a modified Intern Program, naming it the Library Associates Program. The purpose was now to "train personnel in the skills required for effective operation of communication services for the biomedical community." In keeping with NLM's increasing functions the program included instruction in the various operations of computerized bibliographic systems, audiovisual techniques, biomedical communications, specialized information services, and grants. As the program developed members of the Library staff served as training coordinators, the first of whom was Scott Adams, followed by a former intern Maxine Hanke.

By this time NLM's grants program was operating, and a number of medical libraries and library schools were receiving funds to present advanced training programs. The annual production of their graduates did much to alleviate the shortage of well-trained librarians for medical institutions.

During the first 20 years of the programs (1957–64, 1967–79), 66 persons received advanced training at NLM. The programs carried prestige, and librarians regarded graduates very highly. Upon completion of their training the

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

graduates had no difficulty obtaining positions in the profession, and rapidly assumed posts of responsibility in library management or systems design. Approximately three-fourths of them remained in the library field, one-half in medical libraries. More than a third elected to remain at NLM for at least a year, many moving into positions of responsibility, as coordinator of the Regional Medical Library Program, chief of the Technical Services Division, head of the Acquisition Section, and on-line training coordinator.

THE GILLMORE BEQUEST

During World War I Captain Robert Tracy Gillmore, Medical Officers Reserve Corps, died while serving in the Army at Fort Oglethorpe, Georgia. After his death his wife, Emma Wheat Gillmore, also a physician, joined the Public Health Service for the duration of the war. Some 20 years later Emma Gillmore began to think about the disposition of her estate. The Gillmores had had no children, and she had no relatives. At first she placed \$5,000 in a trust fund and willed this to the Library. "It would give me personal pleasure," she told Librarian Jones, "to feel that upon my death this trust fund . . . would be turned over direct to the . . . Library . . . [to be] used in whatever way desired, unrestricted in every sense of the word."²⁷ Later she changed her will, appointing the Surgeon General of the Army an executor and bequeathing practically all of her estate to the Library.

Emma Gillmore died in Sydenham Hospital, New York City, August 15, 1948. The Government received \$23,434.75 in 1951 to be used by the Library "in the name of my late husband, Robert Tracy Gillmore, and myself, Emma Wheat Gillmore." In 1964 Director Cummings arranged with Surgeon General of the Army Leonard D. Heaton to draw on the fund to help provide the building with something greatly needed; a meeting place for societies and for conferences of groups associated with the Library. A large storage room was remodeled into an auditorium and a study, both named in memory of John Shaw Billings. In addition the bequest was used to produce dioramas of the four buildings that had housed the Library since the Civil War, to engage artists to paint portraits of former directors McNinch and Rogers, and to purchase rare books for the History of Medicine Division.²⁸

The latter included two publications from the 16th, 11 from the 17th and 12 from the 18th centuries on medicine or related subjects. The most important work was a unique manuscript by Conrad Gesner, a notebook in which he jotted down his impression of famous physicians, naturalists, and other scientists whom he met between 1555 and 1565, and in which more than 200 of these persons wrote short passages and their autographs.

Emma Wheat Gillmore never saw the building in Bethesda, but her gift of furnishings has been appreciated by the tens of thousands of listeners in the Billings auditorium, of the paintings by all who have visited the reading room, and of the books by many scholars.

THE BILLINGS AND BICENTENNIAL CELEBRATIONS

In 1965, a century after John Shaw Billings entered the Army Surgeon General's office, his work in transforming the small reference collection of books and journals into a national library was commemorated by the observance of a Billings Centennial. On June 17 members of Congress, officials of the government, and leaders in medicine, librarianship, and communication met at the Library.²⁹

The afternoon session, scheduled to be held out-of-doors in front of the building, was forced into the main reading room by rain. There Norman Q. Brill, chairman of the Board of Regents, presided. After a welcome by Director Cummings, Surgeon General Luther Terry introduced Representative John E. Fogarty who spoke on "Medical Libraries and Medical Research." Wilbur J. Cohen, Undersecretary of the Department of Health, Education, and Welfare, introduced Representative Leo W. O'Brien who delivered an address on "Medical Libraries and Medical Education" on behalf of Representative Oren Harris, who was unable to attend. Anthony J. Celebrezze, Secretary of the Department of Health, Education, and Welfare, introduced Senator Lister Hill who talked about "The Medical Library Crisis-Billings to MEDLARS."

Following the speeches guests toured the Library and viewed an exhibit of Billings memorabilia, ranging from diplomas, photographs, books, personal letters, newspaper clippings, literary articles, official documents and lecture notes to the early Hollerith punch card tabulation equipment (the foundation of the International Business Machines Corporation) developed at Billings' suggestion.

The evening program, held in the Billings auditorium, featured talks about Billings by Jean A. Curran, professor emeritus of history of medicine at State University of New York; Bess Furman Armstrong, former Washington newspaper correspondent and author of a history of the Public Health Service; and Frank B. Rogers, one of Billings' successors as Director of the Library.

As a lasting memento of the occasion the Library issued all of the addresses in a volume, *John Shaw Billings Centennial*, and published a facsimile copy of an outline of an autobiography that Billings began in 1905 but never completed.

In a private ceremony preceding the centennial, a link from the old Library to the new was provided by Colonel Robert Howe Fletcher, grandson of Robert Fletcher, Billings' friend and collaborator in the Library and in the production of *Index Medicus* for a third of a century. Colonel Fletcher presented to NLM literary manuscripts, articles, and memorabilia of his grandfather, including the medal awarded by the Royal College of Surgeons of England in 1910.

Several years after the Billings celebration, it occurred to Mary Corning that the Bicentennial of the United States was approaching, and that it would be appropriate for the Library to contribute to the anniversary. She suggested to Cummings that NLM sponsor a Festschrift assessing 200 years of biomedicine and health, and prognosticating the future. Cummings and she then planned a series of events involving a Colloquium and Festschrift.³⁰

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

The "Colloquium on the Bicentennial of Medicine in the United States" was held on May 6 and 7, 1976. Topics included medical education, public health and preventive medicine, medical care, select specialty areas, biomedical communications, the Federal role in medical education and research, and U. S. medicine as seen from abroad. Several hundred physicians, scientists and educators from the United States and other countries attended; essays were presented, reviewed by a special discussant, and then discussed by the audience.

On the evening of May 6, a special Board of Regents dinner attended by 225 guests took place in the main reading room, the first time such a banquet was held in the building. The guests of honor included those who had assisted in developing the Federal health effort and NLM's role in biomedical communications. The closing lecture by Philip Handler was presented in the National Museum of Science and Technology on May 7, and was followed by a reception and buffet. Among the congratulatory messages received by the Library were those from President Ford, and Senators Humphrey, Magnuson, and Kennedy. The colloquium was described as "a great tribute to American medicine."

The lectures presented at the colloquium were published in a two-volume set, *Advances in American Medicine: Essays at the Bicentennial*, by the Josiah Macy, Jr. Foundation in cooperation with the Library. Three special presentations not included in *Advances* were published by NLM in a volume, *Epilogue: Essays at the Bicentennial of Medicine in the United States*. The Library also issued a special annual report devoted to its development and history, *Communication in the Service of American Health . . . a Bicentennial Report of the National Library of Medicine*.

For more than the first century of its existence the National Library of Medicine was a traditional library, acquiring, cataloging, storing, and lending literature. Then in less than a decade it mechanized and computerized its bibliographic functions, and in another decade it began to utilize television, satellites, and audiovisuals. In years to come, it will use every other means of communication that is available. The Library of the future may be one in which there will be no readers, only literature, equipment, and staff, information being delivered to users in homes, offices, hospitals, laboratories, institutions, and student areas through rapid communications. What John Shaw Billings said a century ago is true today and will continue to be as long as the institution stands:³¹

I may say that the future prospects of the Library are excellent. It is not dependent on the skill or energy, or goodwill, of any one man, it is becoming more and more known to, and more and more used by, the members of the medical profession, and so long as they are interested in it, the necessary appropriations will be made and the skilled force employed to increase, preserve, and catalogue it. The service rendered by a number of those employed in the

Library is not a mere matter of money—they are deeply interested in their work and proud of the results, and they can and will carry it on and instruct others who will come after them and do likewise

Notes

¹ Information on the Library's increased emphasis on dental literature was obtained from Kenneth Lynn, Martin Cummings, records of the Board of Regents, and *NLM News*

The first dentists on the Board of Regents were Basil G Bibby, professor of dentistry, University of Rochester, 1956–1959, and Maynard K Hine, dean, School of Dentistry, Indiana University, 1959–1963

² Information on the renaissance of veterinary medicine in NLM was obtained from Fritz Gluckstein, Martin Cummings, records of the Board of Regents, annual reports of the Library, and *NLM News*

³ Information on scholars-in-residence was obtained from John Blake, records of the Board of Regents, *NLM News*, annual reports of the Library, and records of the program

⁴ Information on reorganizations within the Library were obtained from library manuals of operations, Public Health Service manuals, annual reports of the Library, and *NLM News*

⁵ See, for example, the article by R B Livingston and C F Bridgman, "Progress Report on the Neurosciences Study Plan," *Trans Am Neurol Ass* 94 165–7 (1969)

⁶ R Q Marston, W D Mayer, "The Interdependence of Regional Medical Programs and Continuing Education," *J Med Educ* 42 119–25 (1967)

⁷ The Universities Associated for Research and Education in Pathology produced several publications, among them K Brinkhous and J Johnson, *Thrombus*, 1972

⁸ Information on continuing education was obtained from Harold Schoolman, Martin Cummings, Kenneth Lynn, Carl Douglass, and also from *NLM News*, records of the Board of Regents, annual reports of the Library, and articles, including M K Schindler, R K Goldstein, J Port, "Organizing Library Audiovisual Services to Support Continuing Education," *Mount Sinai J Med* 46 357–9 (1979), and "Library Mobilization for Continuing Education," *Bull Med Lib Ass* 68 240–2 (1980), both of which describe a program at Mount Sinai supported by a grant for NLM

⁹ Information on international cooperation was obtained from Mary Corning, Martin Cummings, James Barry, deputy associate director of library operations, Brenda Swanson, chief of

Selection and Acquisition Section, and Galina V Zarechnak, program officer in international programs Consulted also were records of the Board of Regents, annual reports of the Library, *NLM News*, and articles by Corning, especially "International Biomedical Communications," *Health Commun Informatics* 6 212–42 (1980), and "The United States National Library of Medicine's International Relationships," *Med Inform* 5 3–20 (1980)

¹⁰ Information on the Special Foreign Currency Program was obtained from Jeanne Brand, Mary Corning, documents in the files of the program, records of the Board of Regents, and annual reports of the Library

A list of titles of publications produced from 1974 onward under the Special Foreign Currency Program may be found in annual reports of the Library A complete list of all publications from 1965 onward may be obtained from NLM

¹¹ Memo, Jones to Lt Col M Ladd, May 30, 1944, with attachments, memo, Jones to editor, Army Medical Bulletin, June 9, 1944, with attached policy regarding microfilming NLM

¹² Statement by Joseph H McNinch, May 1979 NLM

¹³ McNinch, *Proceedings Fourth Annual Meeting of the Honorary Consultants* (1947) p 13 S Adams, Report on Six Month Project Schedule, April 19, 1948, p 2 file Activities of AML, MS/C/309

The so-called "Gentlemen's Agreement" was written in 1935 by the National Association of Book Publishers and the Joint Committee on Materials for Research (representing libraries) It stated in part that a library could make a single photographic reproduction of a part of a volume for a scholar who stated that he desired the reproduction solely for research in lieu of a loan of the volume

¹⁴ Board of Regents, 1957 The policy was the subject of the entire June 1957 issue of *NLM News* Information was also provided by Frank B Rogers

¹⁵ The results of Kurth's pioneering study were presented in a 49-page pamphlet, *Survey of the Interlibrary Loan Operation of the National Library of Medicine* (Public Health Service, 1962)

¹⁶ Much was written in journals and news-

EXTENSIONS OF TRADITIONAL LIBRARY SERVICE

papers about this landmark suit NLM has a large file of clippings, articles and correspondence, and the published papers and documents filed before the courts Information on this suit was also obtained from Albert Berkowitz, head of the Reference Services Division, who testified in the case, Martin Cummings, and Scott Adams

¹⁷ Public Law 94-553, 90 Stat 2541

¹⁸ The act that established NLM specified that it had to preserve library materials pertinent to medicine

Information on preservation may be found in annual reports of the Library, *NLM News*, and minutes of the Board of Regents Additional information was obtained from Thomas Bagg, Martin Cummings, and Albert Berkowitz, chief of the Reference Services Division

¹⁹ Edward J Forbes, Thomas C Bagg, *Report of a Study of Requirements and Specifications for Serial and Monograph Microrecording for the National Library of Medicine*, NBS Report 9446, 1966

²⁰ 89th Cong , 1st sess , Departments of Labor, and Health, Education, and Welfare Appropriations for 1966, part 2, pp 760, 770 776-8

²¹ Information on the modern manuscript collection was obtained from John Blake, Manfred Wasserman, Peter Olch, and documents in HMD

The early manuscripts were described by Dorothy M Schullian and Francis E Sommer in *A Catalogue of Incunabula and Manuscripts in the Army Medical Library* (1950)

²² Memo, Blake to Rogers, Nov 8, 1961, sub Establishment of Manuscripts Section

²³ Memo, Director NLM to Chief, HMD, Nov 13, 1961, sub Collecting manuscript materials

²⁴ Information on the oral history program was obtained from documents in the files of the History of Medicine Division, and from Peter Olch, John Blake, and Martin Cummings

²⁵ Information on COSATI and the Federal Library Committee was obtained from Martin Cummings, James Barry, records of the Board of Regents, *NLM News*, and annual reports of

the Library A statement of the reorganization and functions of the committee is in *Federal Register*, vol 38, no 106, June 4, 1973, p 14729

²⁶ Information on the training programs may be found in records of the Board of Regents, *NLM News*, annual reports of the Library, and a report by Louise Darling, "National Library of Medicine Library Associates Program in Medical Librarianship and Biomedical Communications," (1980) Information was also obtained from Frank B Rogers, Scott Adams, and Maxine Hanke, director of the Mid-Atlantic Regional Medical Library Program See also Estelle Brodman, "Continuing Education for Medical Librarianship," *Bull Med Lib Ass* 48 408-412 (1960)

²⁷ Letters, Gillmore to Jones, Dec 6, 1937 MS/C/346

²⁸ Lloyd B Embry, Washington, D C , painted the portrait of McNinch Frederick C Trucksess, University of Colorado Department of Fine Arts, painted the portrait of Rogers

The volumes carry this bookplate National Library of Medicine/Bethesda, Maryland/Purchased From The/Robert Tracy Gillmore/and/Emma Wheat Gillmore/Bequest

²⁹ *John Shaw Billings, an Autobiographical Fragment, 1905, A Facsimile copy of the Original Manuscript* (1965) *Catalog of an Exhibit, June 17-30, 1965, John Shaw Billings Centennial John Shaw Billings Centennial addresses presented June 17, 1965, in commemoration of the 100th Anniversary of Dr Billings' appointment to head the Library of the Surgeon General's Office, U S Army Correspondence, clippings, programs, and other material relating to the centennial may be found in MS/C/261*

³⁰ Information on the bicentennial celebration was obtained from Mary Corning *NLM News*, June 1976, and correspondence in the Library

³¹ John S Billings, 'The Conditions and Prospects of the Library of the Surgeon General's Office, and of its Index-Catalogue,' *Trans Ass Amer Phys* 6 251-7 (1891) *Boston Med Surg J* 125 344-6 (1891) *Med News* (Phila) 59 350-3 (1891)